SPF-2022

Book of Abstracts

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(S3 Poster 15483) S3-P5

Interannual wind variability as a key driver of anchoveta (*Engraulis ringens*) recruitment in southern Humboldt system

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The study of the recruitment dynamics in exploited fish has been of wide scientific interest, highlighting that the environment can have a strong effect on recruitment. Anchoveta is one of the most important pelagic fisheries in the southern Humboldt system. Annual landings of anchoveta are directly related to the strength of recruitment, which is susceptible to environmental variability that controls the early survival of this species. Using remotely-sensed observations together with the outputs of an age-structured stock assessment model we address the impact of interannual wind variability on anchoveta recruitment. Using generalized additive models, we show that there is a dome-shaped relationship between alongshore wind magnitude and anchoveta recruitment suggesting that levels above the 7 m/s and extreme events more than 15 days with 15 m/s threshold negatively affect early survival, which we attribute to an increase in offshore advective losses. In addition, we show that the inclusion of wind significantly improves the modeling of recruitment instead of using only spawning biomass as a predictor. Finally, we discuss the implications for the predictability of fisheries yield, its response to environmental variability, and tactical fisheries management decisions.

(S3 Poster 15512) S3-P6

Linking events affecting timeseries of landings of small-pelagic fisheries in the Mediterranean Sea: Does it affect current stock assessment?

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The stock assessment and consequently advice provided for small-pelagic priority stocks in the Mediterranean have been mainly based on timeseries of landings since 2000 and on a geographical subarea (GSA) basis. Aimed at distinguishing the adopted management regulations and events from different origins (hereinafter "Events") in relation to available historical timeseries of reported landings, the General Fisheries Commission for the Mediterranean (GFCM) is leading the construction of so-called timelines. In order to reach the final timeline by fishery (stocks sharing gear and area), Events were initially linked to 1) all target stocks by country and 2) single stock by GSA. The timeline in the Alboran Sea (Algeria, EU-Spain, Morocco) indicates that the current production levels of small pelagics are one fifth of landings in 1950's. The contribution of mackerels and the movement of fleets from different-home ports are important drivers of the landings trend. The timeline of round sardinella in the eastern (Cyprus, Egypt, EU-Greece, Lebanon, Palestine and Turkey) has been importantly affected by

patchy data across countries. However, landings reflect contributions of inland fertilizers, sea-water warming and technical measures aimed at reducing fishing effort. The timeline in the Adriatic Sea (Albania, EU-Croatia, EU-Italy, Montenegro and EU-Slovenia) differs among stocks (sardine and anchovy), because different-sourced Events and divergent catch trends among countries occur. Findings emerging from the timelines may promote rethinking of both the length of timeseries and the landings trends used to provide advice on stock status and can also facilitate an appraisal of adopted and potential management measures.